CLAIMS

1. A metal glass body prepared by a method that does not depend on cooling speed, characterized in that the metal glass body has a metal glass texture structure of fine crystals uniformly dispersed throughout a glass phase.

2. The metal glass body according to Claim 1, wherein the fine crystals have a size controlled in the range of nanometers to micrometers.

3. The metal glass body according to Claim 1, wherein the metal is an alloy system capable of forming glass.

4. The metal glass body according to Claim 1, wherein the metal glass body is a composite material comprising fine crystals of a specific composition and a metal glass single phase.

5. The metal glass body according to Claim 4, wherein the composition of the fine crystals is controlled by selecting the alloy composition.

6. A metal glass product comprising the metal glass body according to any of Claims 1 through 5.

7. The metal glass product according to Claim 6, wherein the product is a highly-functional member.

8. The metal glass product according to Claim 6, wherein the product is a structural member.

9. A method for producing a metal glass body, comprising solidifying a molten metal while applying

electromagnetic vibrating force thereto, and thereby producing a single-phase metal glass or a metal glass body having a metal glass texture structure of fine crystals uniformly dispersed throughout a glass phase.

10. The method according to Claim 9, wherein a direct current magnetic field and an alternating current electrical field are simultaneously applied for applying electromagnetic vibration on the molten metal to produce the metal glass body.

11. The method according to Claim 9, wherein the metal glass body is produced with generation of electromagnetic vibration in a specific current frequency band (100 Hz or more).

12. The method according to Claim 9, wherein the metal glass body is produced with generation of electromagnetic vibration at a specific magnetic field strength (1 Tesla or more).

13. The method according to Claim 9, wherein metal glass formation capability is improved by increasing the current frequency.

14. The method according to Claim 9, wherein metal glass formation capability is improved by applying the electromagnetic vibration at the liquid stage before solidification.

15. The method according to Claim 14, wherein the non-vibrating retention time after application of electromagnetic

vibration is shortened.

16. The method according to Claim 9, wherein metal glass formation capability is improved by increasing the applied current strength of the electromagnetic vibration.

17. The method according to Claim 9, wherein the metal is an alloy system capable of forming glass.

18. The method according to Claim 17, wherein the alloy composition is selected and the electromagnetic vibrating force conditions and/or temperature conditions are adjusted so as to produce a composite material in which the functionality of the metal glass and the properties of strength, toughness and/or resistance to breakage conferred by the fine crystals are controlled.

19. An apparatus for producing a metal glass body characterized in that the apparatus is equipped with a container for storing a sample metal material, means for heating and melting the metal material, means for generating and applying electromagnetic vibration, cooling means for cooling a molten metal and means for measuring and controlling temperature, wherein a metal glass is produced by solidifying the molten metal while applying electromagnetic vibrating force thereto.

20. The apparatus according to Claim 19, wherein the electromagnetic vibration generating means is a superconducting magnet.